

is adsorbed or bound in a monomolecular state, wherein part of the coloring material and fine particles are also present inside of the recording medium.

Please add new Claim 52 as follows.

BF --52. (New) A recorded article comprising a colored portion formed on a recording medium, wherein the colored portion comprises aggregates of fine particles, to which particles the coloring material is adsorbed in a monomolecular state, wherein each aggregate comprises fine particles agglomerated through the coloring material.--

REMARKS

Reconsideration and allowance of the subject application are respectfully requested.

Claims 23-36, 39 and 50-52 are pending in this application, with Claims 24-26, 33-36, 39 and 50-52 being the independent claims. Withdrawn Claims 1-22, 37, 38 and 40-49 have been cancelled without prejudice or disclaimer. Claim 52 is newly added; support for it can be found in the originally-filed application at least in Fig. 12, reference numeral 1215.

Claims 23-27, 33-36, and 50 are amended herein to more clearly

recite the features of the invention. It is submitted that no new matter has been added by the amendments herein.

The previous rejection of numerous claims under 35 U.S.C. § 112, second paragraph, has been withdrawn, but Claim 26 was apparently rejected due to use of the term "main." Without conceding the propriety of this rejection, to expedite prosecution, Claim 26 is amended herein so as not to use that term. It is submitted that the claims comply with all aspects of Section 112, and withdrawal of this rejection is respectfully requested.

Claims 25, 30-33, 36, 39 and 50-51 were rejected under 35 U.S.C. § 102(e) as allegedly anticipated by EP 900,831 A2 (EP '831). Claims 23, 24, 26, 27, 34 and 35 were rejected under 35 U.S.C. § 103(a) as allegedly obvious over EP '831. Claims 28 and 29 were rejected under 35 U.S.C. § 103(a) as allegedly obvious over EP '831 in view of EP 776,950 A2 (EP '950). Applicants respectfully disagree with these rejections in view of the claims as currently presented.

In the present invention, as recited in Claim 24, the colored portion of the image comprises aggregates of fine particles, each of the fine particles having a coloring material thereon by adsorption in a monomolecular state. In Applicants'

view, the present invention is neither taught nor suggested by the cited references.

In the October 10, 2002 Office Action, ("Response to Arguments, page 4) the Examiner states that in EP '831, "though part of the dye is penetrated into the recording medium, a part of the dye is also incorporated into the fine particles.", citing page 5, lines 46-51 of 'EP '831. Applicants note that lines 44-48 of page 5 of EP '831 read as follows:

... the fines particles of the polymer having the film-forming property coalesce with and fused to one another to form a film including the colorant. Therefore, the formed image is excellent in rubbing/scratch resistance as well as in waterfastness. When the colorant is a dye, it is considered that a part of the dye is penetrated into the recording medium and the fine particles of the polymer are left on the surface of the recording medium while incorporating a part of the dye, thereby forming a film...

(paragraph [0033], emphasis added.)

Accordingly, in Applicants' view, it is clear that in EP '831, the coloring material in the recorded image is not present in a monomolecular state on the surface of fine particles because fine particles do not exist any more after printing. Applicants further note that the Examples in EP '831 are carried out with film-forming polymer.

The Examiner also takes the position (page 4 of the Office Action) that EP '831 does not teach away from the dye

being adsorbed into the particles, but in Applicants' view, a dye cannot be adsorbed into particles, so as to be in a monomolecular state on the surface of particles. EP '831, at page 5, lines 2-3 states that "the colorant and the fine particles of the polymer agglomerate quickly", on the recording medium. The portion of the present specification (the last paragraph of page 4) to which the Examiner refers describes the role of the ink-receiving layer of coated paper to achieve an image having high saturation. The present invention aims to provide an ink jet image having high density and saturation without impairing the texture of the recording medium, as well as having high saturation and higher quality with fewer white stripes. In contrast, the stated goal of EP '831 is production of an image having excellent rubbing/scratch resistance with little bleeding and unevenness. Accordingly, Applicants conclude that it would not have been obvious for one skilled in the art to combine "coloring material in a monomolecular state" with the fine polymer particles of EP '831.

Regarding the combination of EP '950 with EP '831, the Examiner states that it is obvious to use anionic or cationic colorants and to use fine particles having a polarity which is opposite to that of the colorant. Applicants submit, however,

that there is nothing in EP '950 to motivate such a combination. EP '950 seeks to provide a stronger reaction than conventional two liquid systems, and teaches use of an ink containing a specific nonionic water-soluble polymer and anionic or cationic coloring material, and a cationic liquid composition, to form a giant, water-insoluble aggregate of three components (page 7, lines 41-46). Applicants submit that the combination of EP '831 and '950 would not result in the invention of Claim 28 or 29.

Accordingly, Applicants conclude that the cited references, whether taken alone or in combination, do not teach or suggest all the features of the present invention. Withdrawal of the rejections under Sections 102 and 103 is respectfully requested.

For the foregoing reasons, Applicants submit that the present invention, as recited in independent Claims 24-27, 33-36, 39 and 50-52, is patentably defined over the cited references. The dependent claims should also be deemed allowable, in their own right, for defining other patentable features of the present invention in addition to those recited in their respective independent claims. Individual consideration of the dependent claims is requested.

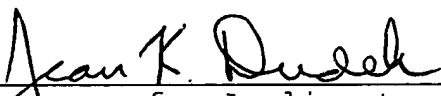
Applicants also respectfully request that this Amendment After Final be entered. This Amendment could not have

been presented earlier as it was earnestly believed that the claims on file would be found allowable. Given the Examiner's familiarity with the application, Applicants believe that a full understanding and consideration of this Amendment would not require undue time or effort by the Examiner. Moreover, for the reasons discussed above, Applicants submit that this Amendment places the application in condition for allowance. At the very least, it is believed to place the application in better form for appeal. Accordingly, entry of this Amendment is believed to be appropriate and such entry is respectfully requested.

The present application is in condition for allowance. Favorable consideration, withdrawal of the Sections 112, 102 and 103 rejections set forth in the Office Action, and an early Notice of Allowance are respectfully requested.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our address given below.

Respectfully submitted,

  
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Attorney for Applicants  
Jean K. Dudek  
Registration No. 30,938

FITZPATRICK, CELLA, HARPER & SCINTO  
30 Rockefeller Plaza  
New York, New York 10112-3801  
Facsimile: (212) 218-2200  
JKD:jvf

VERSION WITH MARKINGS TO SHOW CHANGES MADE TO CLAIMS

23. (Amended) An ink-jet recorded image according to Claim 24 [comprising a colored portion which contains fine particles having a coloring material in a monomolecular state on surfaces thereof] wherein a saturation in CIE-L\*a\*b\* space at a solid printed area of the colored portion is at least 50.

24. (Twice Amended) An ink-jet recorded image comprising a colored portion formed on a recording medium, wherein the colored portion comprises [is formed with fine particles or] aggregates of fine particles, each of the fine particles having a coloring material thereon by adsorption [thereof and a coloring material adsorbed on a surface of the fine particles or aggregates thereof] in a monomolecular state.

25. (Twice Amended) An ink-jet recorded image, formed with [comprising] a coloring material and fine particles provided on a recording medium, wherein the recording medium is in direct contact with part of fine particles and aggregates thereof, and part of the coloring material is adsorbed in a monomolecular state onto a surface of the fine particles and aggregates thereof.

26. (Twice Amended) An ink-jet recorded image formed on a recording medium[, the image comprising] with a coloring material and fine particles reactive with the coloring material provided on a [coloring] recording medium, wherein the image has



a portion comprising aggregates of the fine particles, each of the fine particles having the coloring material thereon by adsorption in a monomolecular state [are forming a main portion of the image], and the [main] portion has a feathering portion formed with the coloring material in a peripheral part thereof.

27. (Twice Amended) An ink-jet recorded image according to claim 24 [formed on a recording medium comprising a coloring material and fine particles reactive with the coloring material,] wherein a ratio of the coloring material to the fine particles is larger in a peripheral portion of the image than in a main portion of the image.

33. (Amended) A recorded article having an image comprising a colored portion on a recording medium, wherein the image comprises [at least one of fine particles and] aggregates of fine particles, [at least one of the fine particles and the aggregates of fine particles adsorb a coloring material in a monomolecular state on the surfaces thereof,] each of the fine particles having a coloring material thereon by adsorption in a monomolecular state and at least one of [the fine particles and] the aggregates of fine particles come into contact with the surface of a constituent of [a] the recording medium through the coloring material.

34. (Twice Amended) A recorded article comprising [at least one of fine particles and] aggregates of fine particles, each of the fine particles having a coloring material thereon by adsorption in a monomolecular state, [on the surfaces of which a coloring material has been adsorbed in a monomolecular state,]

said [fine particles or] aggregates being present on the surface of a recording medium in the form of an aggregate mass containing voids.

35. (Twice Amended) A recorded article having an image comprising a colored portion on a recording medium, wherein the colored portion includes a first region containing [at least one of fine particles and] aggregates of fine particles, each of the fine particles having a coloring material thereon by adsorption in a monomolecular state, [on the surfaces of which a coloring material has been adsorbed in a monomolecular state,] and a second region located outside the first region and containing the coloring material.

36. (Twice Amended) A recorded article comprising, on the surface of a recording medium, a recorded portion comprising [containing at least one of fine particles and] aggregates of fine particles, each of the fine particles having a coloring material thereon by adsorption in a monomolecular state [on the surfaces of which a recording agent has been adsorbed in a monomolecular state].

50. (Twice Amended) A recorded article having a colored portion formed on a recording medium, the colored portion containing [at least one of fine particles and] aggregates of fine particles, each of the fine particles having a coloring material thereon by adsorption in a monomolecular state, [on the surfaces of which a coloring material has been adsorbed in a monomolecular state,] wherein at least one of the coloring material and the fine particles has penetrated into [an] the inside of the recording medium.